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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In the Matter of)

Advanced Television Systems)
and Their Impact upon the)
Existing Television Broadcast)
Service)

MM Docket No. 87-268

To: The Commission

REPLY OF COSMOS BROADCASTING

Cosmos Broadcasting Corporation ("Cosmos"), licensee of television station WTOL(TV), NTSC Channel 11, Toledo, Ohio, by its attorneys, and pursuant to 47 C.F.R. § 1.429(g), hereby replies to the Opposition filed July 18, 1997, by Dispatch Broadcast Group ("Dispatch") in response to the Petition for Reconsideration of the *Sixth Report and Order* in MM Docket No. 87-268, FCC 97-115 (released April 21, 1997) ("*Sixth R&O*") submitted by Cosmos ("Petition").^{1/}

In its petition, Cosmos proposed that the Commission change the assigned DTV Channel 11 for WBNS(TV) in Columbus, Ohio, because the DTV operations would create considerable co-channel interference with WTOL(TV) in Toledo. Dispatch filed its Opposition on behalf of WBNS(TV), asserting that Cosmos had not adequately described its analytical methodology and that the methodology was inconsistent with Longley-Rice.^{2/}

^{1/} Cosmos was served with Dispatch's Opposition by mail. Accordingly, pursuant to Sections 1.429(g) and 1.4(h) of the Commission's rules, this reply is timely.

^{2/} Opposition at 1.

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In response to Dispatch's opposition, Cosmos provides in the Technical Exhibit ("Attachment A") an analysis of WTOL(TV)'s NTSC coverage that is in accordance with the Commission's *OET Bulletin No. 69*. Cosmos believes that this information is sufficient to refute all of the grounds for opposition listed by Dispatch. As shown in the Technical Exhibit, the predicted interference from WBNS(TV)'s DTV operations would result in a significant loss of viewers inside the Toledo DMA. As further described in the Exhibit, WBNS(TV) would have to decrease its output power substantially below that authorized in order to avoid interfering with WTOL(TV)'s NTSC signal.

Because the Commission will allow parties to supplement their petitions for reconsideration, Cosmos anticipates that it will provide more analysis in its own supplement, along with, it hopes, information reflecting the results of cooperation between the interested parties.

For the foregoing reasons, and for the reasons set forth in the Petition, the Commission should reconsider the assignment of DTV Channel 11 to WBNS(TV) and identify an alternate channel for such use.

Respectfully submitted,

COSMOS BROADCASTING CORPORATION

By: 

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Dated: July 31, 1997

CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing Reply of Cosmos Broadcasting Corporation was sent by first-class mail, postage prepaid, this 31st day of July, 1997, to each of the following:

R. Clark Wadlow, Esq.
Thomas P. Van Wazer, Esq.
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Connie Wright-Zink
Connie Wright-Zink

ATTACHMENT A

Technical Exhibit

TECHNICAL EXHIBIT
COSMOS BROADCASTING CORPORATION
STATION WTOL-TV
TOLEDO, OHIO

Technical Statement

The technical exhibit consisting of this statement and the attached Figure 1 was prepared on behalf of Cosmos Broadcasting Corporation, licensee of television station WTOL-TV at Toledo, Ohio. This exhibit supports a response to the reply comments in the Petition for Partial Reconsideration recently filed by Cosmos as part of the Federal Communications action in MM Docket No. 87-268, *In the Matter of Advanced Television Systems and Their Impact upon the Existing Television Broadcast Service, Sixth Report and Order*, herein "Sixth Report." In particular, Cosmos is replying to the comments submitted by WBNS-TV on Channel 10 at Columbus, Ohio.

The WBNS-TV comments allege that the interference prediction methodology used by Cosmos within the petition was not fully described and also inappropriate for DTV interference calculations. The Cosmos petition stated that a large amount of interference would occur to WTOL-TV within the Toledo Designated Market Area (DMA) and Grade B contour from the proposed co-channel DTV operation of WBNS-TV.

When the interference analysis for WTOL-TV was initially calculated, OET Bulletin 69 that describes the evaluation of DTV coverage and interference had not been released. Since the Commission has subsequently released the Bulletin, an interference analysis, similar to the Commission's procedure used in the Sixth report, can now be completed for WTOL-TV.

Shown on Figure 1 is the WTOL-TV Grade B contour, the Toledo DMA and the predicted interference areas to WTOL-TV from the WBNS-TV DTV allotment. As can be seen from the map, interference to WTOL-TV from WBNS-TV is predicted over an area of 2,200 square kilometers encompassing 69,900 persons within the WTOL-TV Grade B coverage contour.¹ An interference area of 1,750 square kilometers, or 13.2 percent, encompassing 56,300 persons, or 5.5 percent, is predicted within the Toledo DMA and WTOL-TV Grade B contour.² This also represents a loss of approximately 20,635 television households within the DMA.

The interference to WTOL-TV by WBNS-TV on DTV channel 11 can be eliminated. The WBNS-TV effective radiated power, in the direction of WTOL-TV, would have to be decreased 25 dB below the assigned WBNS-TV DTV power to satisfy the Commission's +34 dB desired-to-undesired ratio. Figure 2 is a polar plot showing the relative field values for both the WBNS-TV DTV directional antenna as proposed by

¹ The 1990 U.S. Census population data was employed for all calculations.

² The Toledo DMA has a population of 1,094,352 persons with a land area of 15,542 square kilometers of which the WTOL-TV Grade B coverage contour provides service to 93.8 percent of the DMA population and 85.2 percent of the DMA area.

the Commission in the Sixth Report (solid line) and the directional pattern required to provide protection to WTOL-TV (dashed line).³ As can be seen from Figure 2, a null to the depth of 25 dB in the WBNS-TV transmitting antenna would be necessary to prevent predicted interference from being caused to WTOL-TV. The directional antenna is pattern is assumed to have a 5 dB per ten-degree rise from the null.

The interference prediction method employed for the herein calculations are based on the Commission's OET Bulletin 69 and the software provided by the Commission. The terrain elevations and the associated Longley-Rice field strength values are calculated at one-kilometer intervals for both the desired and undesired stations with an assumed receiver antenna elevated 9.1 meters above ground level.⁴ The Longley-Rice interference calculations were based on 50 percent of the time, 50 percent of the locations and 50 percent confidence for the desired station, WTOL-TV, and 10 percent of the time, 50 percent of the locations and 50 percent confidence for the undesired station, WBNS-TV. A desired-to-undesired interference ratio of +34 dB was employed with consideration to the off-axis receiving antenna discrimination, where pertinent. An analog receiver antenna radiation pattern with azimuthal discrimination calculated as the fourth power to the cosine of the angle between the desired and undesired stations with a maximum front-to-back ration of 6 dB was employed. The Commission's recommendations of the appropriate input

³ du Treil, Lundin & Rackley, Inc. in Reply Comments submitted in the Sixth Report discussed the directional antenna patterns assigned to every DTV allotment

⁴ The ground elevations were derived from the three-second terrain database.

parameters of the Longely-Rice propagation model were also used.

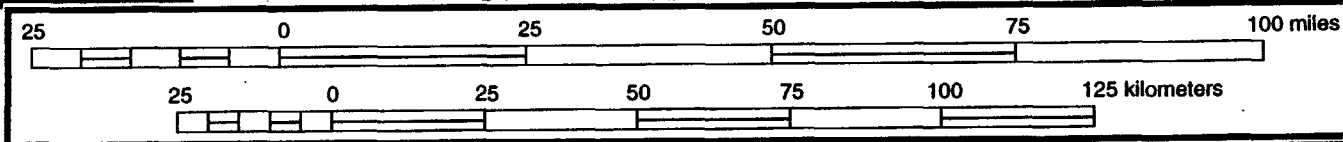
The WBNS-TV DTV directional transmitting antenna pattern and maximum effective radiated power of 14 kilowatts was obtained from the Commission's engineering database. The transmitting antenna height above average terrain of 271 meters and the transmitter location at the WBNS-TV licensed NTSC site was employed.



Charles A. Cooper

July 29, 1997

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**PREDICTED INTERFERENCE TO WTOL-TV NTSC
FROM WBNS-TV DTV**
COSMOS BROADCASTING CORPORATION
WTOL-TV TOLEDO, OHIO
du Treil, Lundin & Rackley, Inc. Sarasota, Florida

WTOL-TV Toledo, Ohio
CH 11 316 kW 305 M
Grade B (NTSC)

Interference from WBNS-TV
Columbus, Ohio
DTV CH 11 14 kW 271 M

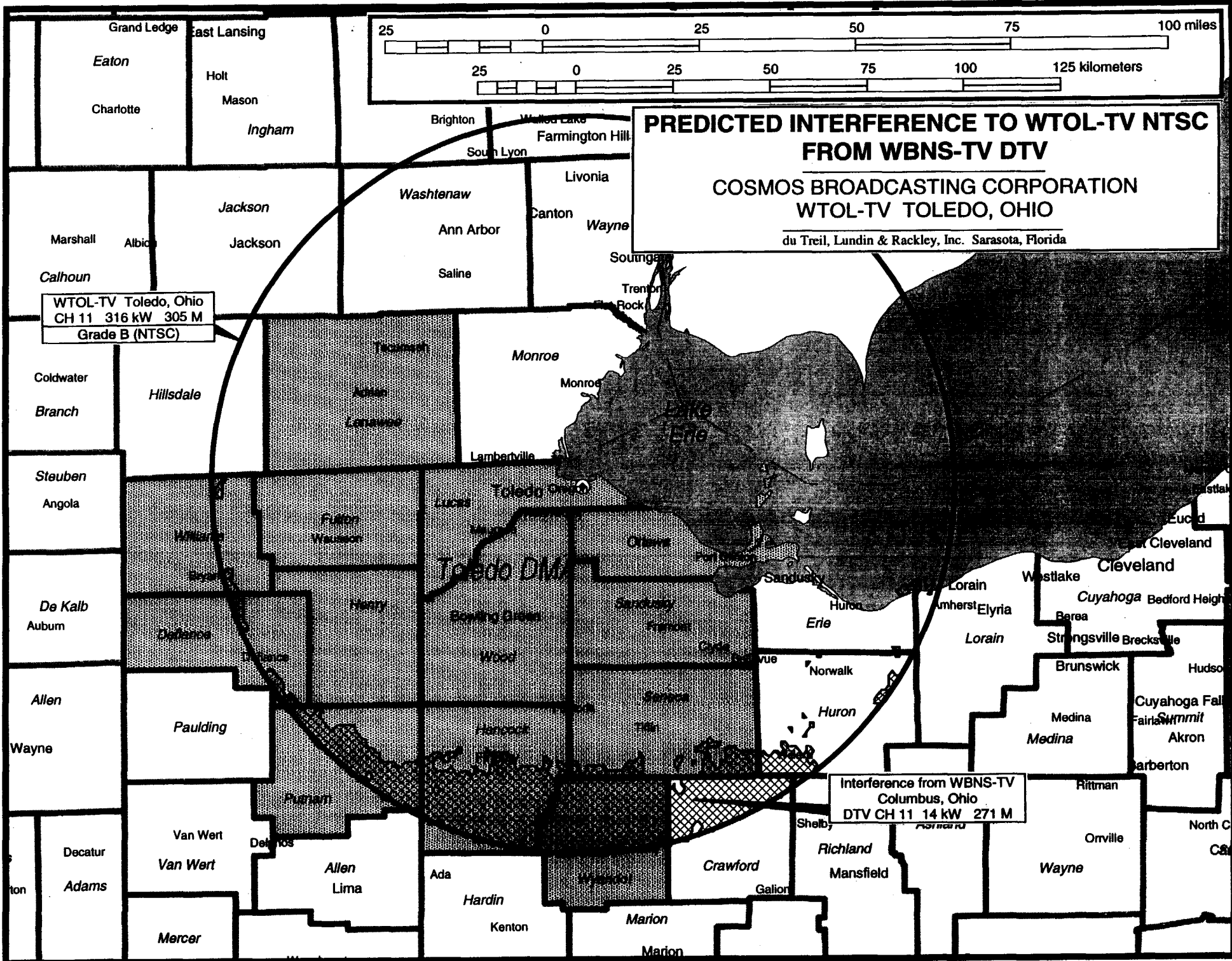


Figure 1

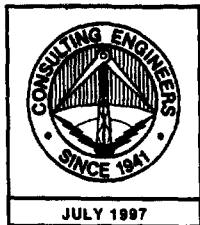
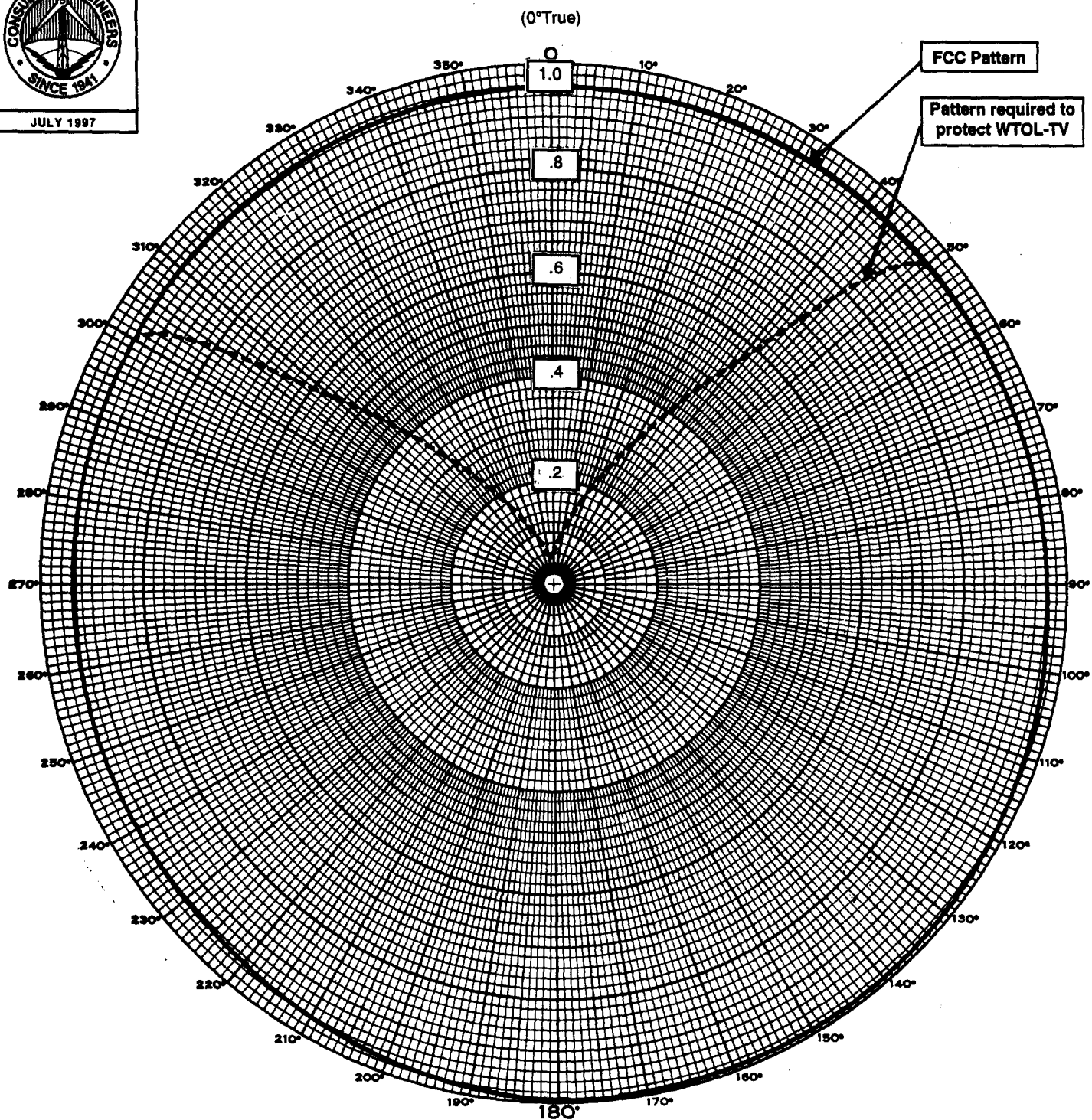


Figure 2



WBNS-TV DTV DIRECTIONAL PATTERNS
(Relative Field)

COSMOS BROADCASTING CORPORATION
WTOL-TV TOLEDO, OHIO

du Treil, Lundin & Rackley, Inc. Sarasota, Florida